



## Operational Technologies Corporation (OpTech)

4100 N.W. Loop 410, Suite 230  
San Antonio, Texas 78248  
(210) 731-0000  
(210) 731-0008 FAX



### INTRODUCTION

Operational Technologies Corporation (OpTech) was incorporated on March 5, 1986 in San Antonio, Texas. OpTech is a minority-owned and operated business and was qualified under the Small Business Administration's 8(a) Program in September 1986, graduating from the 8(a) Program in September 1996. Since its graduation, OpTech has continued to grow and flourish and expand its business, while focusing in key areas. In 2000, OpTech achieved its certification as an ISO 9001:2000 company. The ISO certification grew out of our entry into the Supply Chain Management Business, which continues to grow as an international business. All facets of OpTech's business are now integrated into our ISO program, including contracting, accounting, and human resources. OpTech is a multi-disciplined team of professionals and technicians providing top quality services to clients.

The Personnel Research Division (PRD) evaluates existing selection, job performance appraisal, promotion, and training systems to ensure conformance to best professional practices, efficiency, and business necessity requirements. Evaluation involves data analyses of reliability, validity, adverse impact, and job relatedness of personnel system components, and provides documentation essential to system litigation defense. PRD also modifies, designs, or develops new personnel or training systems. Included is development or identification of needed tests, structured interviews, interviewer/rater training, employee surveys, and conduct of job analysis, evaluation, or design. Finally, the PRD develops PC, net, or web-based training systems including those using expert systems.

OpTech, has 20 years of experience in all phases of the development of Department of Defense (DoD) personnel tests. The two major test batteries for which OpTech has played a major role are the Air Force Officer Qualifying Test (AFOQT) and the Armed Services Vocational Aptitude Battery (ASVAB).

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***We are committed to excellence in providing scientific and technical solutions for our global clients.***

**OpTech Mission Statement**

Specific areas of Personnel and Training Consulting include:

- employee selection systems testing
- test development
- structured interview systems
- performance appraisal systems
- interviewer/rater training
- employee surveys
- job analysis
- job evaluation
- job design
- promotion systems
- training requirements
- training evaluation
- computer based training
- multimedia
- simulation base
- intelligent (adaptive)
- PC, net, or web based

The following contracts provide a description of the types of work OpTech has done for Federal agencies in the past that relate to SIN 874-1:

#### **Air Force Five-Year Personnel Research Plan**

OpTech developed a 5-year personnel research plan for the Air Force, consisting of about 100 recommended projects in three levels of priorities and the following eight categories of research types: Database Development, Operational Systems Effectiveness, Test Development & Evaluation, Enlisted Selection & Classification, Manpower/Force Modeling, Officer Selection & Classification, and Aircrew Selection. The plan also included estimated funding requirements for each project, and a recommended schedule of activity over the 5-year period. OpTech also discussed the relative merits of alternative agencies for conducting the proposed research.

#### **Research and Analysis Consultation**

OpTech provided consultation and support for the following issues: the Air Force enlisted promotion programs, the Air Force Officer Qualifying Test relative to its validity and other performance characteristics, the Air Force Pilot Candidate Selection Method (PCSM) Program and the related tests, Basic Attributes Test (BAT) and Test of Basic Aviation Skills (TBAS), the Armed Services Vocational Aptitude Battery (ASVAB) and ASVAB composite validation, as well as modifications that could improve its predictive validity. OpTech also made contributions to policy and technical discussions with Air Force Military Accession Policy Working Group (MAPWG) representative and other Service representatives.

OpTech made recommendations to Air Force personnel testing & research policy and operational management functions in support of inter-Service aircrew selection test development and officer selection efforts involving the Army and Navy. OpTech assisted in identifying and proposing potential solutions for issues related to test development, computerization, validation, implementation, and scoring.

OpTech developed position papers and consultation on such issues as premature attrition, diversity issues, officership definition/measurement, officer classification measures for high-attrition technical training schools, gender/diversity analyses of ASVAB and Air Force Officers Qualifying Test (AFOQT) results, utility of non-cognitive measures, and defining database requirements for providing performance criteria data.

**Develop and Field Test Two Prototype Alternate Air Force Officer Qualifying Test (AFOQT)  
Forms and Four Experimental Subtests**

OpTech created two parallel overlength AFOQT alternate forms and created four experimental subtests using appropriate psychometric standards and principles. OpTech printed booklets and shipped booklets, administration instructions and answer sheets to small samples of ROTC, OTS and AFA for field testing. From the tests results, analyses such as item analysis, and test descriptive statistics for comparison of test norms, ability to develop stable conversion tables, appropriate test difficulty levels, discrimination indices and test reliability were conducted. OpTech also identified items needing removal, replacement or revision because of item statistics and test descriptive statistics.

OpTech printed booklets for use during the IOT&E of the new AFOQT versions and experimental subtests, administered the tests to a significant sample of officer candidates and a small number of Category I and II basics and conducted analyses, establishing the reliability of subtests, composites and the AFOQT as a whole. In addition, OpTech equated the new forms and analyzed equating outcomes, thereby determining the construct and concurrent validity of the new R1 and R2 forms and experimental subtests as permitted by existing data. Also, OpTech analyzed the experimental subtests and developed the final experimental subtests for inclusion in the operational versions of the AFOQT. OpTech established a validation database of prototype AFLQT and experimental test results and began amassing performance criteria for all examinees for immediate and later validity analyses.

**Conduct Validation Study of Weighted Airman Promotion System (WAPS)**

The WAPS is used to select personnel for promotion to grades E-5, -6, and -7. WAPS scores are derived from six factors (Specialty Knowledge Test, Promotion Fitness Examination, time-in-service, time-in-grade, awards and decorations, and performance evaluation reports) that are objectively quantifiable and visible to promotion competitors. The six factor scores are combined in a weighted sum and that score is the sole component used to rank order promotion eligibles within each AFSC. The SNCOPP is used to select personnel for promotion to grades E-8 and E-9. As with WAPS, promotion scores were derived from factors that are objectively quantifiable and visible to promotion competitors.

Since these promotion programs were implemented over 30 years ago, changes may have occurred that affect the optimum type, number, and weighting of the factors that should be considered for promotion selection. Consideration should be given to changes in characteristics of the airman population, the nature of the jobs airmen perform, and the environment in which airmen work. In order to ensure that the Air Force continues to select the most promising individuals for promotion, and to ensure that WAPS and the SNCOPP are fair for all and perceived as such, we must reexamine the purpose, intended effects, and actual results of WAPS and the SNCOPP. A 1973 study did reevaluate WAPS (Black, Gott, & Kopyay, 1973) but no revalidation has been conducted since. Small studies and working groups have made minor adjustments in the factors and weights but never revalidated the changed systems. With the demise of the Air Force Human Resources Laboratory and its successor the Armstrong Laboratory, maintenance of WAPS and the SNCOPP was abandoned in 1998.

OpTech conducted a revalidation of the WAPS and the SNCOPP. This project included the review of the existing WAPS and SNCOPP to evaluate their effectiveness in identifying the most qualified personnel for promotion, and reviewing the current WAPS and SNCOPP factors, rating such areas as their intended purpose, effectiveness, quality and fairness. OpTech provided a presentation and prepared a report summarizing all areas of investigation and recommendations which included the production of a detailed research plan and definition of problems and issues for the WAPS, data collection for WAPS, and II data analysis and delivery of final results for WAPS. Finally, OpTech produced a detailed research plan, data analysis and delivery of final results for the SNCOPP.

### Armed Services Vocational Aptitude Battery (ASVAB)

The principal objective of this project was to evaluate if the intended purposes that underlie the changes implemented to the administrative and mechanical classification composites had been achieved. Specifically, OpTech examined how well the current administrative composite (VE+MK) functions operationally in classifying individuals to administrative Air Force specialties using actual accession data. Analysis of how well the current composite retain the predictive validity of its predecessor prior to the removal of NO and CS (VE+NO+CS) was of special interest in the evaluation. Findings in the accession rates analysis were related to the eligible rates for pertinent specialties in the Air Force accession pool.

With assistance from Air Force policy makers and experts, OpTech identified the sample of Administrative and Mechanical Air Force specialties, the relevant variables, and the fiscal years that were used in this study. For example, a range of low, medium and high aptitude specialties were chosen. Some high interest specialties such as high population specialties or those with training attrition or retention problems, or specialties, identified by training and utilization workshops as inappropriate aptitude requirements might be specifically selected.

An analysis of validity using traditional multiple linear regression techniques for determining predictive efficiency was conducted. Here the independent measures were training performance or success and the dependent measures were the ASVAB subtests in the composites. Linear programming/optimization analyses were conducted to compute optimal accession rates for comparison of old and new composites

Multiple linear regression and descriptive statistics analyses were used to compare bias and adverse impact effects of the current vs. the old Administrative and Mechanical ASVAB composites. Bias here is defined as having different regression slopes for minorities as defined by the American Psychological Association's (1999) Test Standards and adverse impact as defined in the Uniform Guidelines for Employee Selection (1978) and multiple examples of case law.



## MOBIS SCHEDULE OF ITEMS – SIN 874-1

### Consulting Services

Providing expert advice, assistance, guidance or counseling in support of agencies' management, organizational and business improvement efforts. This also may include studies, analyses and reports documenting any proposed developmental, consultative or implementation efforts. Examples of consultation include but are not limited to:

- \*Strategic, business & action planning
- \*process & productivity improvement
- \*Leadership Systems
- \*Cycle time
- \*performance measures & indicators

- \*high performance work
- \*systems alignment
- \*organizational assessments
- \*program audits & evaluations
- \*customized training

## Labor Categories and Rates

| Subject Matter Expert Level 4  | \$127.20 |
|--|----------|
| <ul style="list-style-type: none"> <li>• <b>Minimum Experience:</b> At least 25 years extensive experience in the field of specialty, specializing in selection and classification, recruiting, and cost/benefits analyses. Must be well versed in state-of-the-art test composite functionality evaluations and accession rate effects, as well as the clustering technologies for determining the number of efficient and effective job clusters. If significant changes are made in the ASVAB aptitude composites, extensive experience in the clustering technology requirements for evaluating the structure and content of the Air Force job clusters and the linear programming/optimization requirements for analyzing recruit eligibility and availability issues is mandatory. Must have significant directly relevant experience in managing the ASVAB and AFOQT projects and conducting the needed analyses.</li> <li>• <b>Functional Responsibilities:</b> Will apply an understanding of client operations and policies so that research and studies have most effective impact on operations and modifications to policy. Will also ensure that the research methodology is technically sound. Additionally, will have knowledge of lessons learned from past efforts as they may affect policy and operational changes. Will be able to integrate implications of study results with other management policy factors to develop implementation of management improvements.</li> <li>• <b>Minimum Education:</b> A Ph.D.</li> </ul> |          |
| Subject Matter Expert Level III  | \$ 89.17 |
| <ul style="list-style-type: none"> <li>• <b>Minimum Experience:</b> Fifteen (15) years specialized experience in the field of specialty with extensive experience developing test revisions for the ASVAB and AFOQT, performing supportive research including virtually all aspects of test battery revision and corollary activities, with substantial experience with research and development for Department of Defense personnel testing programs. Good verbal and written communications skills.</li> <li>• <b>Functional Responsibilities:</b> Will apply scientific, statistical, and technical expertise to designing research and study protocols so that sound inferences can be drawn. Will apply data collection and data analysis techniques that meet the high standards required to serve as the basis for modifications to personnel policy..</li> <li>• <b>Minimum Education:</b> A Ph.D.</li> </ul>  |          |
| Subject Matter Expert Level II   | \$ 55.27 |
| <ul style="list-style-type: none"> <li>• <b>Minimum Experience:</b> Eight (8) years experience in field of specialty. Good verbal and written communications skills are required.</li> <li>• <b>Functional Responsibilities:</b> Will carry out the research and study plans to maintain the integrity of the process. Will report any significant conditions in the field which may require some adaptation to the research protocol. Will perform initial data analysis and make recommendations concerning the inferences to be drawn from the study results. Will collate information gained from related studies.</li> <li>• <b>Minimum Education:</b> Master's Degree.</li> </ul>  |          |



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| <b>Subject Matter Expert Level I</b>  | <b>\$ 39.19</b> |
| <ul style="list-style-type: none"><li>• <b>Minimum Experience</b> One (1) year experience in area of specialty. .Good verbal and written communications skills are required.</li><li>• <b>Functional Responsibilities:</b> Will perform support functions for the higher level subject matter experts, including the assembly of study materials, obtaining reports of related studies, and the collection of study data..</li><li>• <b>Minimum Education:</b> Batchelor's Degree.</li></ul>  |                 |
| <b>Technical Writer</b>   | <b>\$ 39.32</b> |
| <ul style="list-style-type: none"><li>• <b>Minimum Experience:</b> Five (5) years experience in a technical writing discipline, to include writing, editing and publishing. Ability to research technical material and to translate the essence of such research into articles and publications. Skilled in using word processing computer software to facilitate work.</li><li>• <b>Functional Responsibilities:</b> Will collect technical information from multiple sources and tailor documentation using that information based on specifications for the client's specific requirements.</li><li>• <b>Minimum Education:</b> High School Diploma or Equivalent.</li></ul> |                 |
| <b>Program Support Technician</b>   | <b>\$ 21.78</b> |
| <ul style="list-style-type: none"><li>• <b>Minimum Experience:</b> Five (5) years experience in the word processing field. Proficient in Microsoft Word, Excel, PowerPoint software.</li><li>• <b>Functional Responsibilities:</b> Will maintain project files and documentation, will perform word processing, and will scan or otherwise enter data into computer programs such as WORD and EXCEL. Will maintain required research materials and supplies.</li><li>• <b>Minimum Education:</b> High School Diploma or Equivalent.</li></ul>   |                 |